

WHAT IS CLAIMED IS:

1. An apparatus to arrange spacers at fixed points utilizing a spacer dispersion solution that includes the spacers dispersed in a solvent, the apparatus comprising:

a nozzle head to discharge the spacer dispersion solution from a plurality of nozzle holes, while scanning along a predetermined scanning direction, the plurality of nozzle holes being arranged at a predetermined angle with respect to a direction perpendicular to the scanning direction.

2. An apparatus to arrange spacers at fixed points utilizing a spacer dispersion solution that includes the spacers dispersed in a solvent, the apparatus comprising:

a nozzle head to discharge the spacer dispersion solution from a plurality of nozzle holes, while scanning along a predetermined scanning direction,

the nozzle head being rotatable such that an arrangement direction of the plurality of nozzle holes is inclined at a predetermined angle with respect to a direction perpendicular to the scanning direction.

3. A method of manufacturing a liquid crystal device, in which a pair of substrates are arranged to face each other with a sealing material interposed therebetween, liquid crystal and spacers are injected into the space surrounded by the pair of substrates and the sealing material, and the space is sealed, the method comprising:

intermittently discharging a spacer dispersion solution from nozzle holes onto any one substrate of the pair of substrates while a nozzle head is scanning the one substrate along the scanning direction where an arrangement direction of the nozzle holes in an apparatus to arrange the spacers at fixed points according to claim 1 is inclined at a predetermined angle with respect to a direction perpendicular to the scanning direction.

4. The method according to Claim 3, during the intermit discharging of the spacer dispersion solution, the discharge interval of the spacer dispersion solution is larger than the diameter of the spacer dispersion solution discharged onto the substrate.

5. A liquid crystal device, comprising:

a pair of substrates arranged to face each other with a sealing material interposed therebetween;

liquid crystal and spacers injected into a space surrounded by the pair of substrates and the sealing material, and the space is sealed,

one of the pair of substrates having a plurality of pixel regions and non-pixel regions formed around the pixel regions; and

the spacers being arranged at a predetermined angle with respect to an arrangement direction of the pixel regions in plan view.

6. The liquid crystal device according to Claim 5, the spacers being in the form of a mixture of a single element and an aggregate, the arrangement density of the spacers is 50 to 300/mm<sup>2</sup>, and the average number of spacers per liquid drop is 0.2 to 3.

7. The liquid crystal device according to Claim 5, the spacers being arranged in the non-pixel regions.

8. The liquid crystal device according to Claim 7, a light shielding layer being formed in portions corresponding to the non-pixel regions, where the spacers are arranged.

9. The liquid crystal device according to Claim 5, the spacers being colored.

10. The liquid crystal device according to Claim 5, a process of controlling the alignment of the liquid crystal being performed on the surfaces of the spacers.

11. The liquid crystal device according to Claim 5, a fixing layer fixing the spacers to the substrate being formed on the surfaces of the spacers.

12. An electronic apparatus, comprising:  
the liquid crystal device according to Claim 5.